

Our Data. Your Stories.



June 2024

WHS Profile: Electricians



Safe Work Australia is exploring the WHS profile of specific occupations to help illustrate the nature of risks workers most frequently encounter while performing their duties.

There are over 131,900 Electricians currently employed in Australia, with more than 50% aged under 35 years old. The latest research from Jobs and Skills Australia highlights that there is a persistent shortage of Electricians in our labour market.

Like many other trade workers, Electricians work longer hours per week compared to most other occupations. Electricians also have a higher level of exposure to certain hazards than other workers.

Tragically, these hazards have led to fatal injuries. Over the past 10 years, 44 Electricians died from traumatic injuries at work. Of these, 23 (or 52%) were a result of electrocution, and a further 9 resulted from falls from a height.

Understanding the most common work-related injuries is useful when undertaking a risk assessment. Identifying hazards and assessing the risks of electrical work helps ensure safe and healthy work for all.



Workforce overview



Latest Census data shows there were over **over 131,900** persons employed as Electricians in Australia in 2021.



A younger workforce

52%

are aged under 35 years, compared to 37% for all occupations.



Predominantly male

98%

are Male, compared to 51% for all occupations.



Work full-time

79%

work full-time, compared to 59% for all occupations.

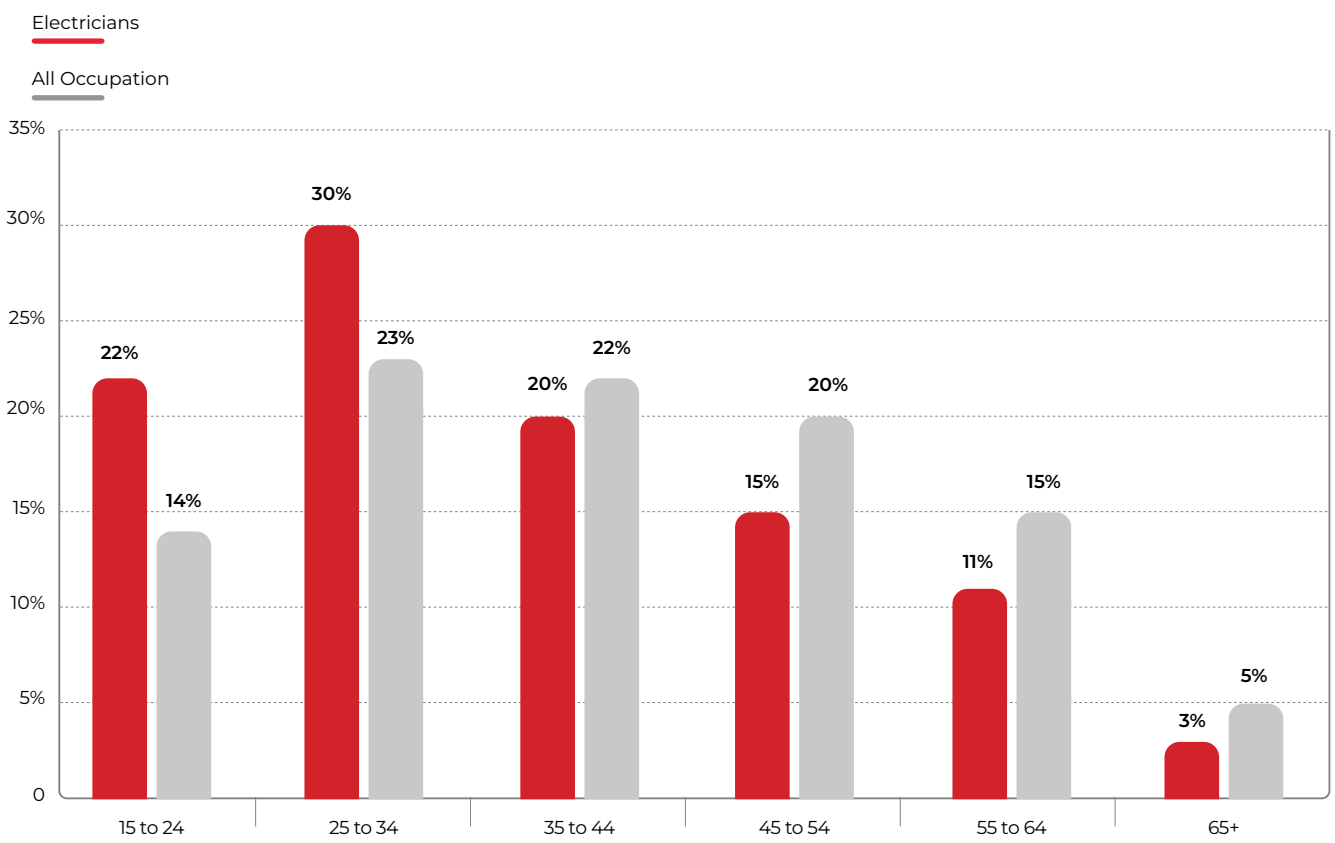


Electricians work longer hours per week

42hrs

compared to an average of 38hrs a week for all occupations.

Figure 1: Proportion of workers by Age group and Occupation





Occupational risk profile

Many day-to-day tasks for Electricians are physically demanding and technically complex. Electricians are exposed to various hazards on a daily basis, including climbing ladders and working at heights, handling heavy equipment, and dealing with electrical systems.

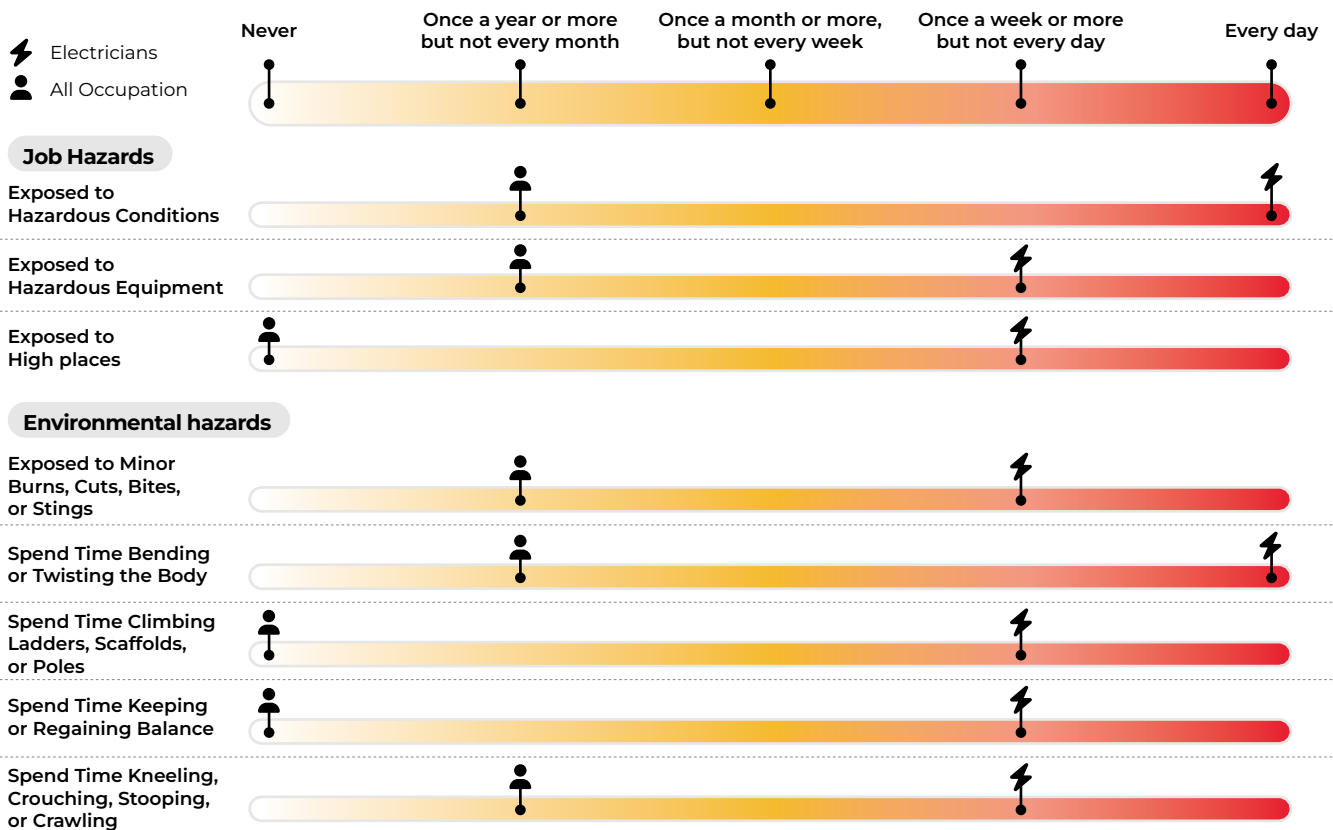
Insights from Safe Work Australia's Beta Occupational Hazards Dataset (BOHD) show that Electricians have a significantly higher level of exposure to Job hazards and Body positioning hazards compared to all other occupations¹.




With the aim of increasing awareness of risks to consider in the workplace, Safe Work Australia has developed a number of interactive tools targeted at workers and persons conducting a business or undertaking (PCBUs) operating in these high risk industries.

The [Know your WHS duties tool](#) for the Construction industry provides information about duties under the [model WHS laws](#), including duties for PCBUs or workers, how to meet these duties, and hazards you may face when working in construction.

Figure 2: Hazard exposure ratings for All Occupations and Electricians



 Electricians are typically exposed to job and environmental hazards on a daily or weekly basis when performing work duties, whereas other occupations are typically exposed to these on a far less frequent basis.

¹ 'All other occupations' is defined as all occupations that are collected within the BOHD. For more information about the BOHD, see <https://data.safeworkaustralia.gov.au/analysis/insights-bohd>

Table 1: Claim frequency rates by Sex and Age Group (2011-12 to 2021-22p²)

Age group	Under 25	25-34	35-44	45-54	55-64	65 and over
All Occupations						
Female	4.0	3.6	5.0	6.9	8.2	7.1
Male	7.3	5.6	5.8	7.0	8.2	6.5
Electricians						
Female	np	np	np	np	np	np
Male	5.3	4.4	4.5	5.2	7.6	8.9

Note: Serious claim frequency rates for female Electricians in some age groups cannot be reported due to the low number of claims.


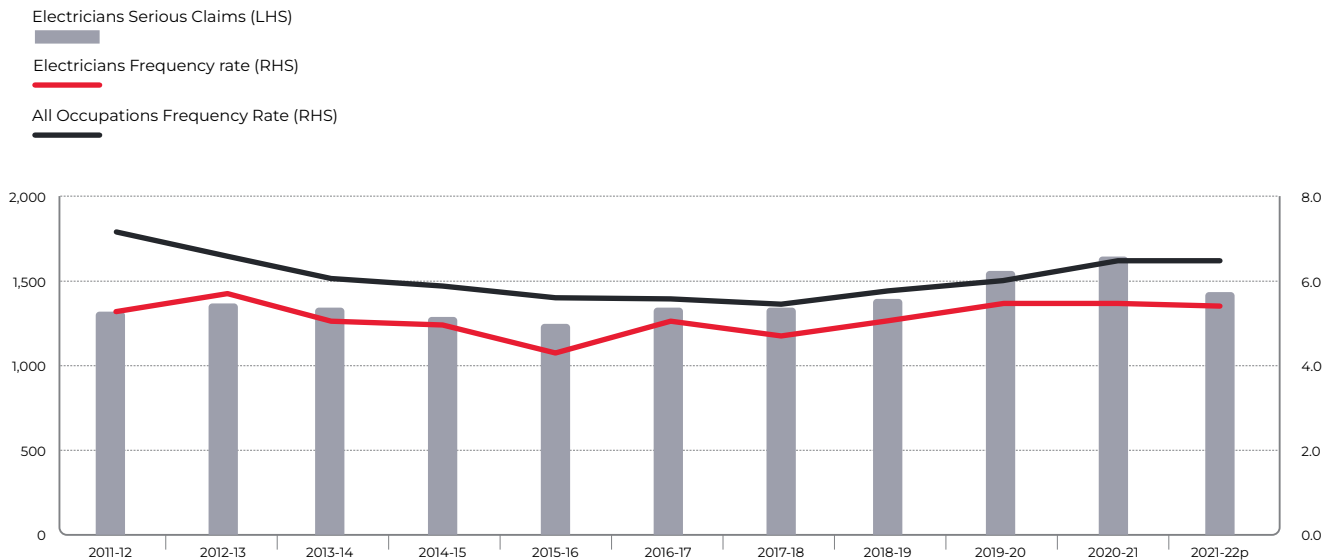

 The highest frequency rates³ of serious workers' compensation claims overall are observed in younger male workers, and older workers.

Figure 3: Number of claims and Claim frequency rate by Year



 Figure 3 shows that the frequency rate of workers' compensation claims for Electricians has been consistently lower compared to the average across all occupations over the last 10 years.

² The 2021-22 NDS data are preliminary (denoted by 'p'). They are likely to rise as revisions occur in future years.

³ Frequency rates are defined as the number of serious claims per million hours worked, using estimates of the working population covered under a workers' compensation schemes.

There are significant differences in the number of hours worked by different groups of employees, and employees at different points in time. These differences in the number of hours worked mean that employees' exposure to work-related risks vary considerably. A frequency rate accounts for these differences and allows more accurate comparisons between industries and/or different groups of workers.

Over the last 10 years, ‘Body stressing’ has consistently been the most common type of work-related injury or illness for Electricians (an average of 35.1% of all serious claims during the period).

However, the frequency of serious claims for Electricians that experienced ‘Electrocution, shock from electric current’ is approximately six times greater than the average across all occupations.

Further, installing electrical equipment may involve working on rooftops, ladders or elevated structures, making ‘falls from a height’ another risk that disproportionately affects Electricians.

Electricians that made a serious claim for ‘falls from a height’ had a median time off work 3.4 weeks longer, and median compensation paid \$5,201 greater, compared to all serious claims for this occupation⁴.

i

The model WHS Regulations include specific requirements to manage the risk of falls. PCBU must eliminate the risk of falls so far as is reasonably practicable, for example, by ensuring that work is carried out on the ground or on solid construction.

If risks remain, PCBU must minimise the risk by providing a safe system of work by:

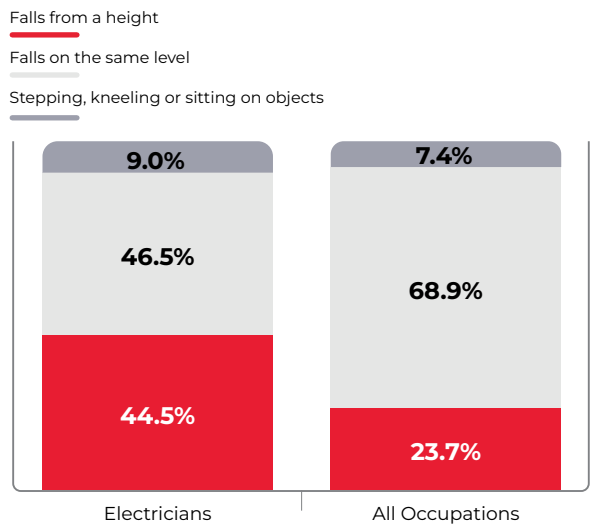
- providing a fall prevention device, or
- if it is not reasonably practicable to provide a fall prevention device, providing a work positioning system, or
- if it is not reasonably practicable to provide a work positioning system, providing a fall arrest system.

Case study

On 1 August 2016, a NSW business conducting electrical installations was fined \$300,000 for an incident where a worker fell more than four metres and sustained fatal injuries. The court found that while an inspection of the property had been conducted and a safe work method statement (SWMS) had been prepared, preventative measures had not been taken by the PCBU to ensure the safety of workers in the area.

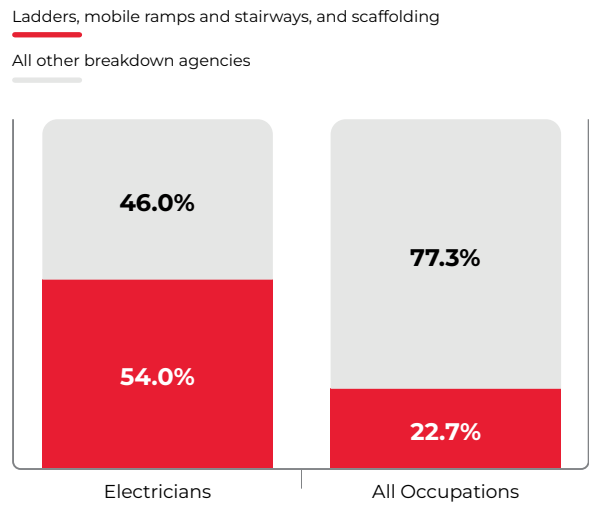
The SWMS set out all of the necessary steps required in managing the risks of a fall, however these steps were not actioned prior to work commencing and as a result, workers’ health was put at unnecessary risk.

Figure 4: Type of ‘Falls, trips and slips of a person’ claims (2021-22p)



The frequency rate of serious claims for Electricians that experienced ‘falls from a height’ was around twice the average across all occupations.

Figure 5: Type of ‘Falls from a height’ claims (2021-22p)



In 2021-22p, over half of the claims (54%) for falls from a height made by Electricians involved ‘Ladders, mobile ramps and stairways, and scaffolding’, compared to just 22.7% across all occupations.

⁴ Latest non-preliminary data are 2020-21 results. Median time lost and compensation payments calculations exclude preliminary data (2021-22p) because some claims from the preliminary year are likely to be open and claimants may accrue more time off work/compensation payments over future years.

⁵ Median compensation calculations exclude no cost compensation claims.

⁶ SafeWork NSW v Voltex Trading Pty Ltd [2023] NSWDC 129, <<https://www.caselaw.nsw.gov.au/decision/187d9dad6804dc4df18f1628>>

Conclusions

There are important WHS risks that Electricians face in the course of their work.

Notable findings include:



Electrocution and falls from a height are significant risks for Electricians

Together, these risks account for close to three quarters (73%) of traumatic injury fatalities involving Electricians over the past 10 years.



Electricians typically work longer hours

(42 hours per week) compared to other Occupations (38 hours per week).



Electricians are exposed to hazardous workplace conditions on a daily basis

Hazardous conditions while at work include high places and dangerous equipment, according to our data.

Appendix

Data Sources

The Electricians – workforce overview has been derived from Australian Bureau of Statistics (ABS) 2021 Census data counting persons by place of usual residence.

The Census is conducted every five years, collecting important data about the Australian population, including demographics, social factors, and economic information. See the [ABS census methodology](#) page for further detail.

The Electricians – occupational risk profile is derived from Safe Work Australia's National Data Set for Compensation-based Statistics (NDS), Traumatic injury fatalities (TIF) and the Beta Occupational Hazards Dataset (BOHD).

Safe Work Australia compiles national workers' compensation statistics using data obtained from workers' compensation authorities in each state, territory, and the Commonwealth government. These data are collated into the NDS, which is Safe Work Australia's primary source of information on work-related injuries and diseases. See [Explanatory Notes: National Data Set for Compensation-based Statistics](#) for detailed information.

The BOHD contains information on the 'work context' of occupations. Part of this includes information on how often occupations are exposed to, or involve doing, things which may result in injury or illness. Safe Work Australia constructed this dataset by mapping selected fields from the United States' O*NET database onto the Australian occupational classification (ANZSCO) and combining this with Safe Work Australia's workers' compensation claims data.

Fatalities data are derived from the Work-related Traumatic Injury Fatalities database, which includes information on all work-related injury fatalities in Australia. This database collates information sourced from workers' compensation data, fatality notifications from Australia's various WHS authorities and information in the National Coronial Information System. See [HYPERLINK "https://data.safeworkaustralia.gov.au/about-our-datasets/work-related-fatalities-data"](https://data.safeworkaustralia.gov.au/about-our-datasets/work-related-fatalities-data) Work-related fatalities data catalogue page for detailed information.

Relevant Resources

Know your duties – a tool for working safely in the construction industry

- <https://www.safeworkaustralia.gov.au/duties-tool>

Model Code of Practice: Managing electrical risks in the workplace

- <https://www.safeworkaustralia.gov.au/doc/model-code-practice-managing-electrical-risks-workplace>

Model Code of Practice: Managing the risks of falls at workplaces

- <https://www.safeworkaustralia.gov.au/doc/model-code-practice-managing-risk-falls-workplaces>